**Topic 4: Improving livelihoods and protecting biodiversity**

# Conservation incentive agreements: An approach to linking conservation and economic development on Indigenous lands in Ecuador

**Richard Rice**
**Jörg Linke**
**Aaron Bruner**
**Luis Suárez**
**Jared Hardner**

**Paper presented at**
**The International Conference on**
**Rural Livelihoods, Forests and Biodiversity**
**19-23 May 2003, Bonn, Germany**

# Conservation incentive agreements: An approach to linking conservation and economic development on Indigenous lands in Ecuador

**Richard Rice**
**Jörg Linke**
**Aaron Bruner**
**Luis Suárez**
**Jared Hardner**

## SUMMARY

The Chocó forest of Ecuador is one of the biologically richest yet most threatened ecosystems in South America. Much of its original extent is already destroyed and the area that remains is under immediate pressure from land clearing for oil palm, logging, and a rapidly expanding road network and associated colonization. A recent gap analysis (Sierra *et al.* 1999) has also revealed that the Chocó forest is one of the least represented ecosystems in Ecuador's protected area system.

Conservation of the Choco's forests depends fundamentally on working with Ecuador's Afro-Ecuadorian and Indigenous communities who hold communal title to some of the last blocks of remaining intact habitat in the region. Many of these communities have an interest in working with outside groups to promote conservation and sustainable development within their territories, and progress has been made towards these goals. However, in a number of communities, there is now an opportunity to make a large step forward with the creation of strictly protected reserved zones on communal land. This objective has been proposed by several communities as a means to protect their heritage as well as to generate economic benefits.

The major challenge is that there are few viable economic options that can effectively promote both conservation and economic development, a practical necessity if communities are to create relatively large conservation areas. In the absence of effective strategies to combine these options, communities are likely to turn to destructive resource extraction.

The project described here seeks to reconcile this dilemma through the use of direct payments to communities in exchange for the provision of conservation of a portion of their territories. This option has the potential to meet both conservation and development objectives by making conservation an economically valuable good and creating a direct incentive for its protection. If functional agreements can be implemented, they would provide not only the protection of an important and highly-threatened habitat type, but also an example to other private and Indigenous land-holders in the region and elsewhere in the country of the potential to work with conservation and development groups to design mutually beneficial land-uses.

## PROJECT CONTEXT

The project presented here is located in Northern Ecuador in an area of lowland Chocó forest. The Chocó is among the richest lowland ecosystems in the world (Dinerstein *et al.* 1995), and has been recognized as a high priority region in WWF's Global 200 analysis (WWF 1997), and in Norman Myers' and Conservation International's analysis of biodiversity Hotspots (Myers *et al.* 2000). The Chocó Endemic Bird Area (EBA) supports the largest number of restricted-range birds of any EBA in the Americas (Stattersfield *et al.* 1998).

Within the Chocó, the humid forests of northern Ecuador stand out as an especially critical conservation priority. Despite the presence of many well known endangered or critically endangered species, including a species of tapir (Tapirus bairdii), spider monkey (Ateles fusciceps), bat (Balantiopteryx infusca), and tinamu (Crypturellus berlepschi), almost no Chocó lowland or foothill forest is currently represented in the country's protected area system (Stattersfield *et al.* 1998, Sierra *et al.* 1999).

The remaining unprotected forest is highly threatened. Since the beginning of the 1990s, Ecuador has aggressively promoted the production of goods such as wood, palm oil and shrimp for external markets via both industrial and small-scale production. At the same time, increasing poverty has led to increased colonization pressures as many poor families seek new sources of arable land and natural resources. These trends have had some of their most serious effects in the Chocó, where large areas have been cleared or degraded during the past decade.

Currently, a growing network of roads and expanding frontiers for logging and settlement are making the last large forested areas of the Chocó accessible. Demand for this land for oil palm, timber and agriculture suggests that as remaining intact areas become accessible in the next few years, habitat that is not actively protected is likely to be destroyed. There is thus an urgent need to find ways to protect key areas of remaining forest.

Traditional parks and reserves are likely to be insufficient to provide a viable approach to conserving these remaining forests, as a large percentage of the Chocó's unprotected forest is legally titled to Afro-ecuadorian and Indigenous peoples. While many of these communities are supportive of conservation and continue to have an interest in maintaining traditional activities that require relatively intact forests, they also have an increasing interest in generating income to acquire a range of market goods, as well as a practical requirement to meet subsistence needs. To move forward, it will therefore be necessary to design land use plans to meet both conservation and development objectives.

In recent years, a major opportunity for income generation in the region has been unsustainable logging. As timber supplies in surrounding areas continue to decline and access to the communities improves, there are increasing opportunities and pressures for communities to engage in this type of unsustainable exploitation. To help communities address these pressures and provide options for a more sustainable form of development, the Manejo Forestal Comunitario – Esmeraldas (Community Forest Management in Esmeraldas, MFC-E) project of the German Technical Cooperation has been working with several communities on a suite of issues designed

to help promote the development a well-planned mosaic of land uses. These activities include management of conflict with loggers, technical support for forest management planning and business training. With this assistance, one community has signed an agreement with an international logging company for the sustainable exploitation of timber on 6,000 hectares of their territory, on which they will eventually seek Forest Stewardship Council certification. MFC-E has also provided support in agroforestry, health and education, and assistance with zoning.

In 2002, Conservation International (CI) and the MFC-E began discussions of how to expand the conservation component of existing work with the communities, via the use of direct payments to communities in exchange for placing a portion of their territories under direct conservation status. This project would be integrated with continued support for a range of land uses in the surrounding territory, including certified logging, ecotourism, and low impact agroforestry, as well as the possible expansion of a nearby protected area, to create an ecologically functional mosaic of land uses.

This paper describes some of the major issues relating to the design of an incentive agreement to meet the joint goals of development and conservation on indigenous lands. It begins with a general description of incentive agreements and some of their potential advantages. It then presents the major actors involved in the project and describes in some detail the necessary components of an incentive agreement in the context of indigenous communities in the Chocó. Finally, it concludes by describing some of the potential risks of incentive agreements and the expected results of the project.

## Incentive Agreements

Conservation of biodiversity-rich habitats presents a challenge to all groups wishing to develop their natural resources for economic ends. Logging, mining and other resource-development activities offer the prospect of tangible economic benefits – including employment and income, foreign currency from exports and public tax revenues – but are often environmentally destructive. Successfully reconciling the protection of key areas and species with local and national development interests therefore remains a major challenge for conservation and development organizations.

Although sustainable resource management seeks to permit resource use while conserving natural ecosystems, experience suggests that a number of obstacles limit both the adoption of sustainable practices and their usefulness in conservation strategies. Among other issues, sustainable production is often dependant on the reliable operation of markets for "green" products from very remote locations, a set of conditions that has proven extremely elusive (Hardner and Rice 2002; Dourojeanni 1999). The generation of income via sustainable use also generally supports conservation only as an indirect result; that is, there is frequently no need to protect biodiversity to earn the income. This strategy has been frequently unsuccessful in producing tangible conservation outcomes even where viable markets for "green" products exist (Ferraro and Kiss 2002, Wells, *et al* 1998, CIFOR *et al.* 1999).

An alternative approach involves treating conservation itself as a good, via agreements in which national authorities or local resource users protect natural ecosystems in exchange for a steady stream of structured payments from

conservationists or other investors. The critical feature of such agreements is that, unlike sustainable use, income no longer relies on habitat modification and natural resource extraction, but instead becomes a function of successful conservation. One illustration of this approach is a "conservation concession" that pays local stakeholders to desist from forest-clearing, and instead remunerates them for monitoring and enforcing habitat protection (Niesten *et al.* unpublished.)

By providing compensation that is contingent on an area meeting clearly defined and measurable biodiversity conservation objectives, incentive agreements can provide a direct and on-going incentive for conservation. Moreover, unlike other market-based approaches, this approach is not dependant upon fluctuating profits from resource extraction; instead, incentive agreements can seek to make payments from endowed funds to provide a relatively stable, long term source of income from habitat protection.

These same characteristics also give incentive agreements the potential to provide significant development benefits. Incentive agreements offer the possibility for communities to market a new service – environmental conservation. In many important conservation areas where market conditions are typically poor, conservation may be more feasible to provide than conventional products, a key advantage in generating a sustainable source of income. The structure of payments for this service can come in many forms depending on the interests of the community and legal requirements.

Further, because incentive agreements are focused on maintaining biodiversity, they can maintain natural resources that poor people must often depend on in times of shortage (EC *et al*.) Finally, as a long-term agreement requiring the building and maintaining of local institutions, incentive agreements may provide a context in which development assistance from other groups can be delivered with many of the conditions necessary for successful projects already in place.

Several additional potential advantages of incentive agreements are worth highlighting:

**A market mechanism for conservation**

Under an incentive agreement, conservation becomes a product that can be paid for directly and provided according to clearly established criteria, offering a tangible flow of benefits and helping to diversify sources of income (Ferraro and Kiss 2002). Income from conservation in turn can increase communities' appreciation for the economic value of biodiversity, and provide a concrete incentive for them to enter into agreements for its protection. In effect, incentive agreements seek to create a missing market to allow development and conservation objectives to be efficiently merged.

### Direct, transparent conservation investments

An incentive agreement yields transparent conservation results that can be identified on a map and monitored based on readily verifiable norms. This approach can therefore help to address expectations of communities as well as demonstrate clear conservation benefits to potential biodiversity investors. Although international willingness to pay for conservation is substantial and increasing, there is a growing trend emphasizing outcome-based rather than process-based indicators of effectiveness of conservation funds. The methodology and concrete geographic basis of incentive agreements respond to this trend.

### Stable source of funds for economic development

Many economic activities, including conventional natural resource extraction, yield revenue flows that are subject to unpredictable fluctuations. Logging, mining, and tourism revenues, for instance, depend on international market conditions. Government revenue streams are also vulnerable to weaknesses in the capacity needed to capture all taxes and fees. Alternatively, an incentive agreement offers regular, relatively low risk payments of a known amount, denominated in a stable foreign currency, for as long as the terms of the agreement are met.

## Key Actors in the Project

### Chachi Indigenous communities

Chachi Indigenous communities hold communal land title to a large area of forest bordering the Cotacachi-Cayapas Ecological Reserve. As the owners of one of the largest remaining intact blocks of lowland forest in the region, these communities have a key role in determining the future of the Chocó's forests. The communities involved in this project, Capuli, el Encanto, Corriente Grande and Sabalito are located at the westernmost edge of the Reserve (see map).

The estimated 1000-1200 people that live in this area are largely engaged in subsistence activities based on agriculture, fishing, hunting, and collection of forest products. Only a very small percentage of community land has been cleared to support these activities. A number of people also periodically enter the market economy as day laborers or to sell forest products. The principle product sold is timber, but other commodities, including agricultural products, bushmeat, canoes and art made from natural fibers are also sold. While potentially valuable timber species are present on community lands, the financial contribution of timber and other activities to the local economy is currently low.

### Proyecto Manejo Forestal Comunitario – Esmeraldas

The German Technical Cooperation (GTZ) in Ecuador has been working with communities in the Chocó for several years and has a long-term commitment to sustainable management of natural resources in the area. Through its Manejo Forestal Comunitario – Esmeraldas project, the GTZ has been working with the communities involved in this project on a suite of complementary resource management activities aimed at helping to develop integrated land-use management. These include sustainable forest management, agricultural production, commercialization

specifically of organic agricultural products, organizational capacity development, conflict resolution, and accompanying the process of decentralization of the Ministry of Environment. In implementing their project, the GTZ is collaborating with a number of local institutions, including the Unidad Coordinadora para el Desarollo Forestal Sostenible de la Provincia de Esmeraldas (Coordination Unit for Sustainable Forest Development in the Province of Esmeraldas, UC).

**Conservation International**

Conservation International's strategy in the Chocó focuses on improving management in existing protected areas and working with partners to develop innovative tools to bring key unprotected areas under protection. Work with the major actors in this project will be supported by several other ongoing projects, including deforestation mapping using satellite images, and creating biological corridors to link remaining habitat in Cotacachi-Cayapas to the Awa Ethnic Forest Reserve to the North.

## PROJECT APPROACH

To reconcile the development and conservation objectives of the communities, the project plans to make use of incentive agreements to support the creation of conservation areas as a productive land use within the Chachi territories. This approach has the potential to avoid some of the primary limitations that projects seeking to generate income from sustainable use/management have experienced in the past, especially in remote areas like the Chachi communities where market access is very poor. Nonetheless, this approach does not exclude ongoing efforts to work with communities on income generating activities, but will instead seek to complement them and will be actively coordinated with sustainable development activities in surrounding areas, including areas of low-impact agroforestry, ecotourism, and sustainable forest management. Incentive agreements will also be developed in connection with ongoing land use planning efforts. The community of Capuli, for example, has a proposed zoning plan that includes areas for forest management, traditional activities, and a small strictly protected "reserved zone" that has been developed in coordination with neighboring communities as a means to conserve some forest areas for future generations and protect sources of water and wildlife.

The plan is to work with the communities to design a series of incentive agreements that facilitate community creation and support of much larger areas for conservation. From a biological perspective, it will be critical to work with communities in a coordinated fashion so that conservation areas can meet the needs of endangered species in the region. These needs are likely to require that conservation areas be both contiguous with Cotacachi-Cayapas and with each other. It may also be important to address land and resource uses, perhaps especially hunting, in surrounding areas dedicated to other uses.

### Components of the Incentive Agreement

Although the project is still in the planning stages, development of incentive agreements will need to consider and define the following general terms and conditions:

- Object of the transaction
- Permitted uses of the area
- Term of the contract
- Definition of price
- Form of compensation
- Performance metrics and monitoring system

### Object of the transaction

From the outset, it will be important to carefully define that the object of the transaction is the use of specific natural resources. Which uses in what area will need to be defined through a process considering needs for biological connectivity, as well as what areas communities are willing to place under an incentive agreement. There is no need, nor is it desirable (or legal) to seek any transfer of property. This issue is central to the concept of the agreement. In effect, the conservation investors will seek to lease the rights to specific uses, with the clear understanding that ownership has not changed.

### Permitted uses of the area

A critical step in the design of the agreement is to negotiate specific uses to be permitted in the project area. Permitted and non-permitted uses will apply both to the communities themselves and to outside groups. The balance between strict protection and use, ranging from no use to limited traditional uses to sustainable harvests of specific commercial resources will be negotiated with each community separately, and will be important in determining the appropriate level of payments. Similarly, it may be necessary for communities to conduct activities such as patrols against illegal use by community members or new settlers in order to comply with the criteria for permitted use, and these activities may require an increased level of compensation. In this regard, it may be possible to build on the existing community structures that currently regulate use levels.

While there is a significant amount of flexibility in negotiating permitted and non-permitted uses to be included in an agreement, it seems likely that as a starting point, negotiations will focus on areas not currently zoned for commercial logging. In these areas, artisenal logging or some hunting might be reduced, but current resource uses would not likely need to be modified greatly. One option that will explicitly be considered for all areas is the possibility of permitting "log-and-protect" - a rapid liquidation of the most valuable tree species followed by incentive payments to take the standing forest permanently out of production once much of its economic value has been realized.

### Term of the contract

Another major component of the agreement that will need to be negotiated is the term of the contract. A possible starting point for this is a limited-term contract subject to periodic renewal. This is important in ensuring that communities retain clear control of and responsibility for natural resources. That is not to say that the contract cannot be renewable in perpetuity, or indeed become permanent if both parties are agreeable.

As with other approaches to conservation, the purpose of incentive agreements is to contribute to the permanent protection of ecosystems.

### Definition of price

Annual payments for placing an area of community land under an incentive agreement will be negotiated taking a range of factors into consideration. These will include the opportunity costs of foregoing natural resource exploitation, including lost employment and income, the cost of managing the area to accomplish conservation objectives, benefits that are preserved by maintaining natural resources intact, such as traditional uses or watershed protection, and the low-risk nature of the conservation payments. Calculation of these values will be more or less formal depending on need. It may also be important to consider costs and benefits from the point of view of different actors *within* the community, again more or less formally. Ultimately, the level of payments will be defined taking into account the goals of fairly compensating for foregone income, generating long-term support from key stakeholders, and clearly delineating a quid-pro-quo arrangement whereby compensation is contingent on conservation services and vice versa.

It is important to note that the appropriate value of payments in incentive agreements must frequently take into account the effect of factors such as large transportation distances on the value of foregone production. Another important set of factors that will influence the appropriate level of payments is the associated benefits (or costs) of protecting habitat intact. The preservation of ecological functions through an incentive agreement can protect important traditional productive activities, through, for example, watershed protection, soil maintenance, and habitat protection. These values would be likely to be reduced or lost if resources were exploited for commercial purposes. For instance, timber extraction frequently contributes to soil erosion and reduces agricultural potential and the availability of both terrestrial and aquatic sources of game, both in the area under concession (if these uses are permitted there), or in surrounding areas used for more direct production.

Similarly, an incentive agreement can avoid much of the social disruption common to major industries operating in Indigenous territories. This in turn can support the conservation of traditional knowledge, for instance in the use of medicinal plants and shamanism. On the other hand, it is also possible that communities may bear costs from conservation, including crop raiding or conflict with carnivores. Finally, because the incentive agreement will involve development and conservation institutions with ties to a wide range of other groups, it offers the potential to provide communities with a number of valuable services that would be difficult or impossible for them to simply pay for with cash income from other sources. These services include training, technical assistance, and access to other complementary projects.

### Form of payments

Conservation payments will not necessarily be in the form of cash. It may be mutually beneficial to make some or all of payments in other forms. For example, payments may be invested in education or health care projects, or may go to support income generating activities. The exact form of payments will be decided as part of the process of agreeing on a level of payment with the communities. Although the role of the investors is not to guide community preferences, it is important that the

chosen form of compensation be one that avoids causing unwanted social disruption, and to this end, it will be important that investors work actively with the communities to decide what will best promote long term sustainable development.

In practice, it is likely that compensation will comprise a mix of support for training, provision of public services and cash payments. It will be ideal to focus on the first two, as they will tend to make benefits available to the entire community and are less complicated to administer. To the extent that cash payments are necessary, distribution will be an important concern, and the project will need to carefully choose rules for distribution.

If the parties arrive at an agreement to which both plan to commit for the medium to long term, payments should ideally be made through the creation of an endowed fund that could meet financial obligations using interest earnings. This would add to the stability of the conservation agreement and eliminate the need for constant fundraising.

### Performance metrics and monitoring system

However the incentive agreement is designed, it will need to have well-defined monitoring plans, so there can be a clear system for both parties to determine whether the terms of the deal are being met. This is critical to ensuring respect for the agreement, as well as to making the agreement a market transaction between equals rather than a hand-out seeking to indirectly change communities' behavior. As such, communities will be actively responsible for guaranteeing the protection of biodiversity. If they do not provide this product according to the terms of the deal, than payment will cease. In turn, biodiversity protection can take on a clear value for the communities, giving them a market incentive for conservation. Via this mechanism, it is explicitly the value and importance of biodiversity conservation that provides the motivation for communities to commit themselves to the implementation of the agreement.

One option which will be considered for promoting clear measurement of performance is a collaboration with the Forest Stewardship Council to develop standards for certification of direct forest protection and a broader range of landscape-based conservation. Involving the FSC in this initiative would provide key support for direct protection and compatible land use plans, as well as aid in creating a replicable model.

## Potential Risks

There are a number of potential risks to the planned use of incentive agreements. These include:

### Reduced incentive for uncompensated conservation

Direct payments for conservation may reduce the incentive for both the Chachi and other communities to voluntarily protect parts of their territories without the need for compensation. Although most internationally funded conservation initiatives have supported sustainable development in exchange for conservation, and therefore arguably have the same potential to create expectations, it is possible that the clear

link between conservation and payments in an incentive agreement could create a more direct expectation. Ultimately, governments and the development and conservation communities must work together to manage such expectations by deciding which conservation mechanism is most appropriate for a particular situation.

**Duration**

Another potential risk relates to the possible impermanence of the incentive agreement. It is possible, for example, that the communities could decide in 10 years to simply end the contract and clear the concession area, although this is a risk common to all conservation projects with communities. It is also possible that to the extent that an agreement results in increased wealth, it could facilitate its own collapse by providing the community with capital needed to enter into new, environmentally destructive activities. Again, there is a similar risk of this with any successful development project, but we believe that over time, the stability and clarity of conservation payments will make them a clear and significant source of value to communities that will not be quickly discarded.

**Decreased welfare**

As with the introduction of any new economic activity, there is a chance that some people will become worse off. On balance however, given the intention to focus on the provision of services to the entire community, the community as a whole should be better off in any acceptable agreement. In this regard it will be important to carefully account for community structure so that underrepresented groups are not missed. The likely low opportunity cost of conservation also suggests that it will be possible to offer a compensation package that adequately addresses lost income. If any groups are likely to bear a disproportional share of the cost, their situations will also be taken into account, although again not necessarily through cash payments.

**Ease of terminating the agreement**

An important issue to address in designing the agreement is how each party can end the agreement in a non-conflictive way that leaves the door open to future work together and does not undo progress made by prior work. From the point of view of the investor, a potential risk to focusing on providing services such as education is significant up-front costs that in practice are not likely to be recoverable if the agreement ends. Similarly, ending payments supporting basic community needs such as healthcare would also likely be difficult. Related to this, if the community cannot comply with the terms of the agreement despite honest efforts, rather than terminate the agreement, the investor may seek to work with the community to either redefine the terms, or help to increase capacity to make the agreement function.

## Expected impact of the planned cooperation

We believe that despite these risks, this project has potential to generate significant and quantifiable benefits for biodiversity conservation and community well-being. Making biodiversity an economically valuable good will give communities an incentive to actively conserve important areas, both by controlling community uses and protecting them from destructive uses by other groups. From a development perspective, this offers communities a new, economically viable and relatively low

risk product to diversify their productive activities. This source of income will also contribute to the conservation of natural habitats that support many traditional activities. Finally, if the project is successful, it will have an important demonstration effect to other groups of a successful model for communities, development agencies and conservation groups to work together to promote jointly held objectives.

## REFERENCES


CIFOR, UNESCO, and UNESCO World Heritage Centre. 1999. World heritage forests: The world heritage convention as a mechanism for conserving tropical forest biodiversity. CIFOR Ad Hoc Publication. Bogor, Indonesia: CIFOR, UNESCO, UNESCO WHC.

Dinerstein, Eric *et al.* 1995. *A conservation assessment of the terrestrial ecoregions of Latin America and the Caribbean.* World Bank: Washington, DC.

Dourojeanni, Marc J. 1999. *The Future of the Latin American Natural Forests*. Environmental Division Working Paper. InterAmerican Development Bank.

EC (European Commision), Department for International Development (DFID), The World Conservation Union (IUCN), Biodiversity in Development, Biodiversity Brief 1: The links between biodiversity and poverty. EC, DFID, IUCN.

Ferraro, Paul J. 2001. Global Habitat Protection: Limitations of Development Interventions and a Role for Conservation Performance Payments. *Conservation Biology* 15, 990-1000.

Ferraro, Paul J., and Agnes Kiss. 2002. Direct Payments to Conserve Biodiversity. *Science* 298, 1718-1719.

Hardner, Jared and Richard Rice. 2002. Rethinking Green Consumerism. *Scientific American*, 88-95.

ITTO (International Tropical Timber Organization). 2002. Assessing progress towards sustainable forest management in the tropics. Available online: http://www.itto.or.jp/inside/measuring_up/download/e.pdf. 8/12/2002.

Myers, Norman *et al.* 2000. Biodiversity Hotspots for Conservation Priorities. *Nature* 403, 853-858.

Niesten, Eduard, Richard Rice and Jared Hardner. Globalization and Direct Incentives for Conservation. *Unpublished Manuscript.*

Sierra, Rodrigo, Felipe Campos, and Jordan Chamberlin. 1999. *Areas Prioritarias para la Conservación de la Biodiversidad en el Ecuador Continental.* Ministerio del Ambiente, EcoCiencia y WCS: Quito, Ecuador.

Stattersfield, Alison J. *et al.* 1998. *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation.* Birdlife International: Cambridge, UK.

Wells, Michael *et al.* 1998. Investing in Biodiversity: A Review of Indonesia's Conservation and Development Projects. East Asia Region, World Bank: Washington, DC.

WWF (World Wildlife Fund). 1997. Global 200 Ecoregions (map). WWF: Washington, DC.

**Map 1. Project location**